Headquarters U. S. Air Force

Integrity - Service - Excellence

AFC2 Transformation Center

Col Buster Burns

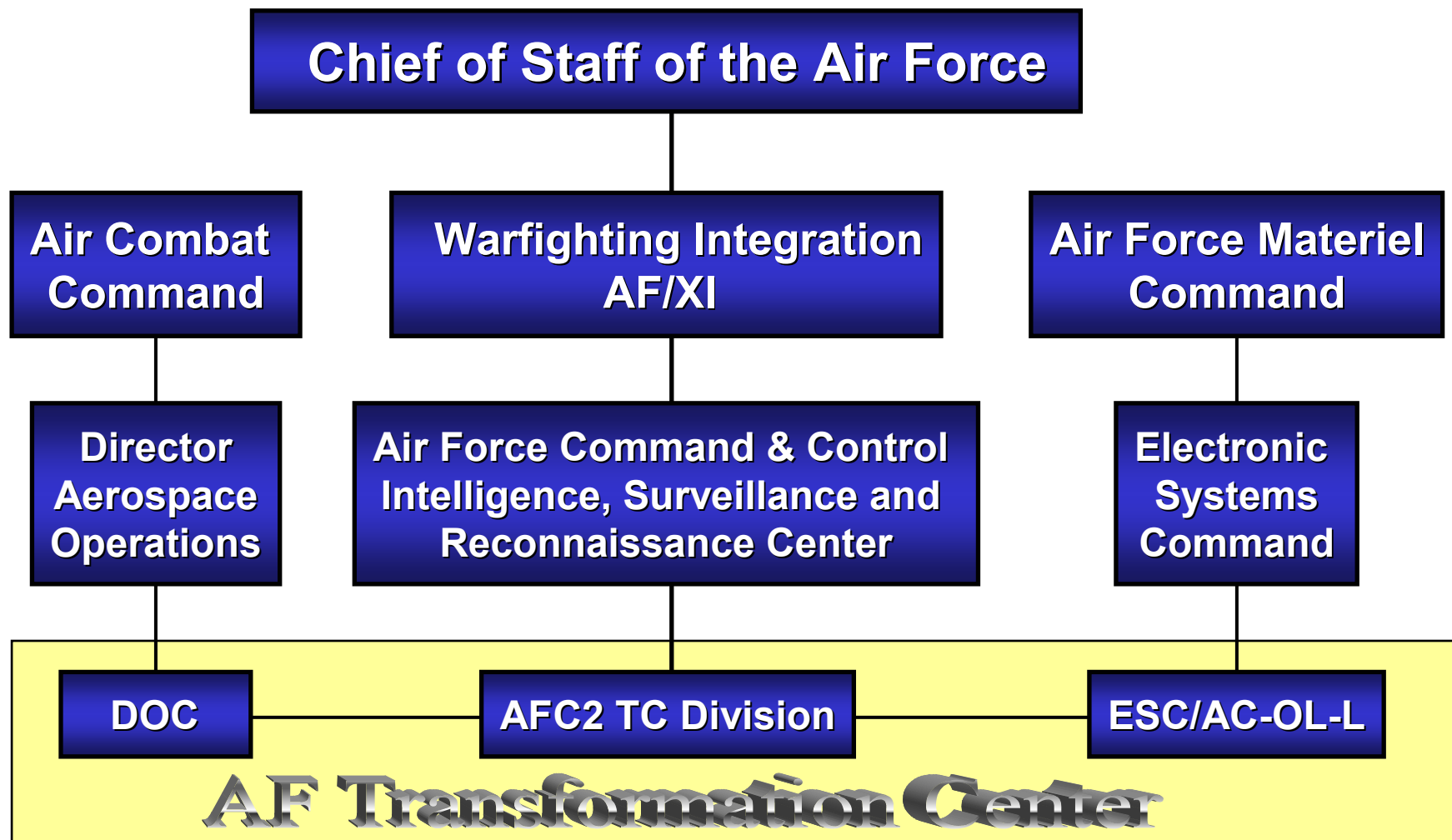**Air Force C2 & ISR Center**

U.S. AIR FORCE

Overview

- **Chain of Command**
- **Birth of CAOC-X**
- **AOC Weapon System**
- **Concept of Transformation**
- **Definition/Mission Statement**
- **Mission Areas**
- **Objectives**
- **Desired End state**

AFTC Chain of Command

Chief of Staff of the Air Force

Air Combat Command

Warfighting Integration AF/XI

Air Force Materiel Command

Director Aerospace Operations

Air Force Command & Control Intelligence, Surveillance and Reconnaissance Center

Electronic Systems Command

DOC

AFC2 TC Division

ESC/AC-OL-L

AF Transformation Center

AOC as a Weapon System

- **CSAF declares AOC a Weapon System in Sep 00**
  - **AN/USQ-163 : the "Falconer"**
- **AOCs exist and they work … Why change?**
  - **Inefficient**
  - **Resource intensive**
  - **Little or no formal training**
  - **No centralized sustainment**
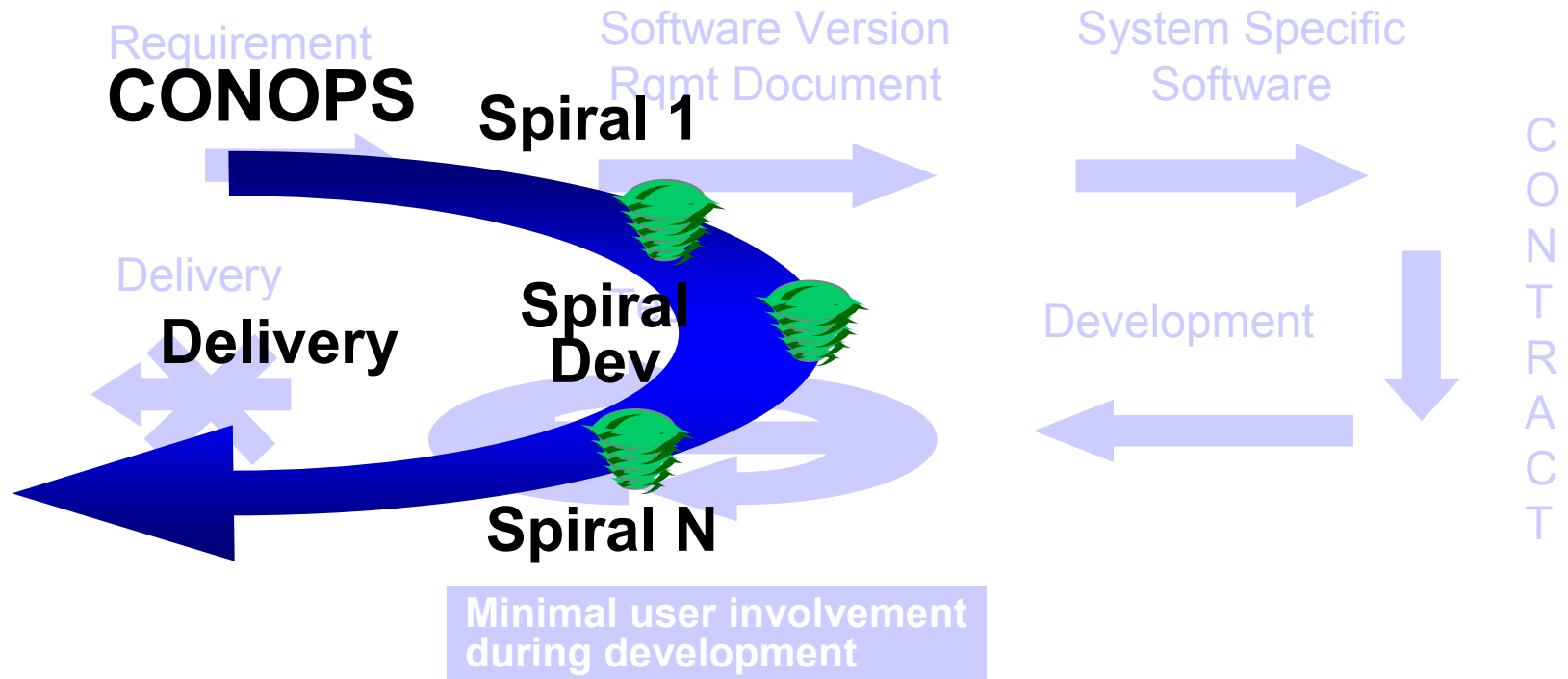 - **No standardization of equipment or TTPs**

> "AOC Weapon System means that we will treat it as a weapon system for ops, sustainment, formal training, crew coordination, standards, checklists … Not that we will acquire it as we would an F22"
> -- Gen Jumper

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Spiral Development Cycle

Requirement

CONOPS

Software Version
Rqmt Document

Spiral 1

System Specific
Software

Delivery

Delivery

Spiral Dev

Development

C O N T R A C T

Spiral N

Minimal user involvement during development

Goal: Continuous technical refresh & evolution

Birth of CAOC-X

CSAF Decision

Spiral Development

**A place and process to rapidly
develop & integrate the AOC Weapon System**

**"Nothing gets fielded to an AOC without
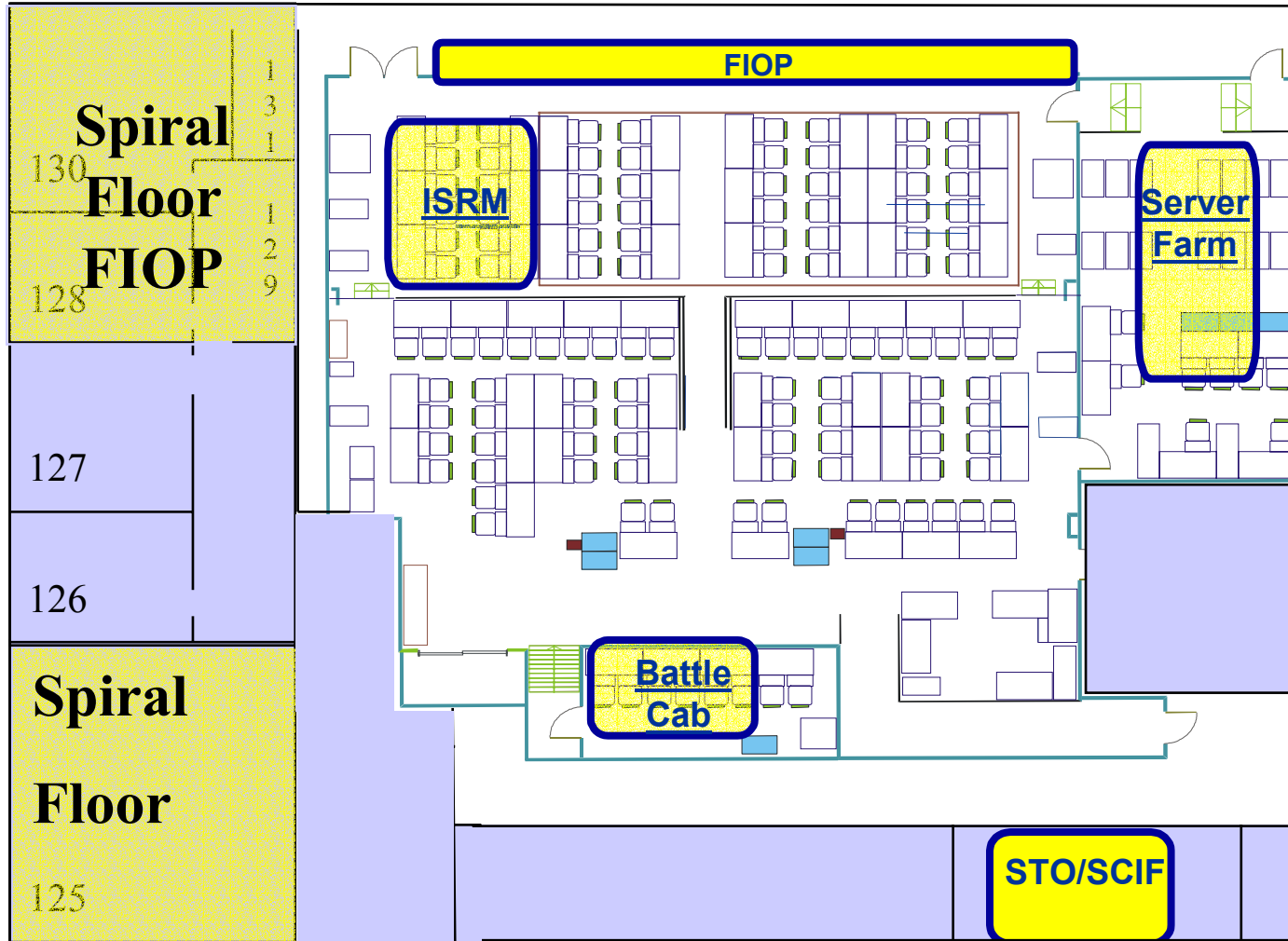going through CAOC-X first"**

Program Background/Status

- **Sep 00**:   **CSAF Declares AOC a Weapon System**
- **Oct 00**:   **CAOC-X Ribbon Cutting & Standup**
- **Aug 01**:   **PSAB AOC WS Block 10 delivered**
- **Sep 01**:   **ACC/CAT stands up in CAOC-X facility**
- **May 02**:   **ACC/CAT move out**
- **Jul 02**:   **JROC validates AOC ORD**
- **Sep 02**:   **AFTC stand-up**
- **Now**   **Al-Udeid stand up**

              Defining Way ahead for AFTC
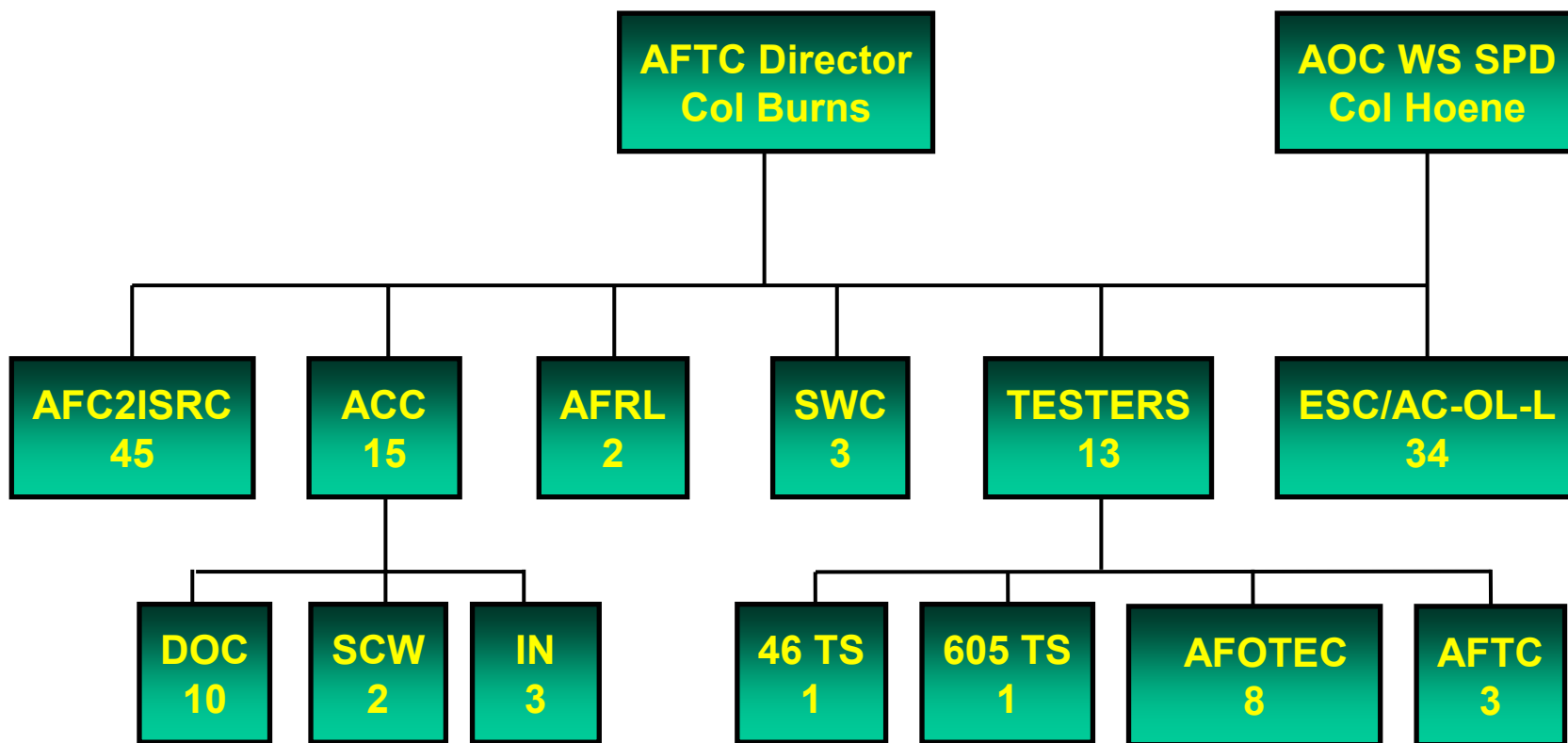
AFTC Floor

U.S. AIR FORCE

Spiral Floor FIOP

130

128

Spiral Floor

125

127

126

FIOP

ISRM

Server Farm

Battle Cab

STO/SCIF

AFTC Manning

U.S. AIR FORCE

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AFTC Director          AOC WS SPD
Col Burns              Col Hoene
```

| AFC2ISRC 45 | ACC 15 | AFRL 2 | SWC 3 | TESTERS 13 | ESC/AC-OL-L 34 |

ACC branches:
| DOC 10 | SCW 2 | IN 3 |

TESTERS branches:
| 46 TS 1 | 605 TS 1 | AFOTEC 8 | AFTC 3 |

Total 112 … 60% contractors

AOC Facilities

U.S. AIR FORCE

- **Falconer AOCs**
  - **9th AF deployed(PSAB)**
    - **Alt AOC (Al-Udeid)**
  - **7th AF (Osan)**
  - **12th AF (DM)**
  - **32nd AOG (Ramstein)**
  - **502nd AOG (Hickam)**

- **MANFOR AOC Units**
  - **152 AOG (Syracuse)**
  - **157 ACS (St Louis)**
  - **701 ACS (March)**
  - **112 ACS (PA)**
  - ***710th (Share with Langley)**
  - ***8th AF (Share with CAOC-T)**

- **Training & Innovation Ctrs**
  - **AFTC (Langley)**
  - **CAOC-N (Nellis)**
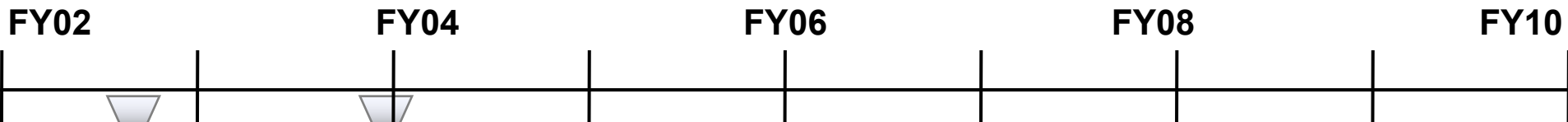 - **CAOC-T (Barksdale)**
  - **C2TIG/FTU (Hurlburt)**
  - **9th AF (Shaw)**

- **Functional AOCs**
  - **CMOC (NORAD)**
  - **11th AF (Elmendorf)**
  - **1st AF (Tyndall)**
  - **14th AF (Vandenburg)**
  - **TACC (Scott)**

Current Strategy

FY02   **FY04**   **FY06**   **FY08**   **FY10**

TBMCS 1.1
USMTF 00

TBMCS 1.2
Web-enabled

Evolution

Block 10

PSAB

10.0.2   **10.0.3**   **10.0.4**

Block 10.1

Revolution

Block 30   **Fielding**
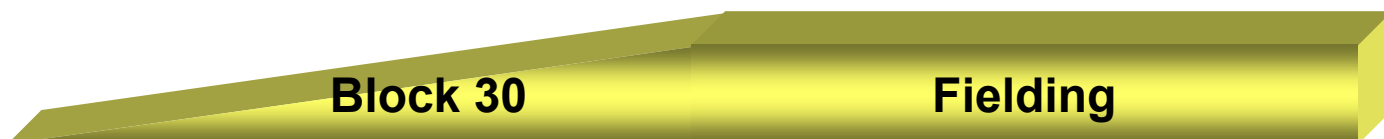
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AOC Capabilities

Block 10	Block 10+	Block 30- Advanced Technology
• No correlated air, ground, and space picture	• Limited Correlation of air, ground, and space picture	• Fusion of air, ground, and space into common picture
• Some formal training infrastructure-IQT	• Partial formal training in place – Formal IQT (FTU)	• Formal training process systemized
• Limited TCT (manual)	• TCT capability in place	• Enhanced TCT operations
• Initial ISR Management	• ISR Management capability	• Full spectrum ISR Mgt
• Limited Coalition Interoperability	• Limited Coalition Interop: some safeguards	• Multi-level security safeguards with Coalition operations
• Not designed for rapid deployability	• Not designed for rapid deployability	• Reach-back/AT- less people and equipment to deploy
• Stovepipe architecture - Many systems pieced together	• Stovepipe Architecture – Additional systems pieced together, but better interop.	• Information services based architecture leveraging commercial products
FY04-FY05	FY04-FY06	FY07-FY09

Block 10 Revision 3

Mission Applications

1. Collection Management Mission Application
2. Command and Control Information Processing System
3. Command and Control Personal Computer
4. Generic Area Limitation Environment Lite
5. Global Command and Control System
6. Global Decision Support System
7. Global Transportation Network
8. Imagery Product Library
9. Information Warfare Planning Capability
10. Interim Targeting Solution
11. Joint Deployable Intelligence Support System
12. Operational Model Exploiting GPS Accuracy
13. PC Integrated Intelligence and Imagery
14. Planning and Decision Aid System
15. Personnel Recovery Mission Software
16. RAINDROP (Legacy)
17. Requirement Management System
18. Space Battle Management Core System
19. Theater Battle Management Core System
20. Theater Weather Server
21. Worldwide Origin Threat System
22. Weapons System Video

Services

23. Air Operations Net
24. Broadsword
25. Defense Message System
26. Global Broadcast System
27. INTELINK and INTELINK-S
28. Joint Collaboration Environment
29. NSA Threat Warning Net
30. Predator Video
31. Purple Net
32. Tactical Data Information Exchange System-Broadcast
33. Tactical Intelligence Broadcast System
34. Tactical Related Applications

Infrastructure

35. Radiant Mercury
36. Imagery Support Server Environment Guard
37. Community of Interest Network
38. Joint Worldwide Intelligence Communications System
39. Sensitive but Unclassified Internet Protocol Network
40. Secure Internet Protocol Router Network
41. Tactical Data Links in formats A, B, J, and S
42. Air Defense System Integrator – TSQ-214
43. Deployable Transit-case System
44. Joint Tactical Air Ground System
45. Precision Lightweight Global Position Receiver
46. Tactical Data Processing Suite
47. Tactical Data Terminal
48. Tactical Receive Suite

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New Way of Doing Business

- **CAOC-X grows into AF C2 Transformation Center**
- **Build on success of CAOC-X**
- **Expand scope beyond AOCs to all C2 nodes**
- **Focus on capabilities – not just technology**

Air Force Transformation

"A process by which the military achieves and maintains asymmetric advantage through changes in operational concepts, organizational structure, and/or technologies that significantly improve warfighting capabilities or ability to meet the demands of a changing security environment"
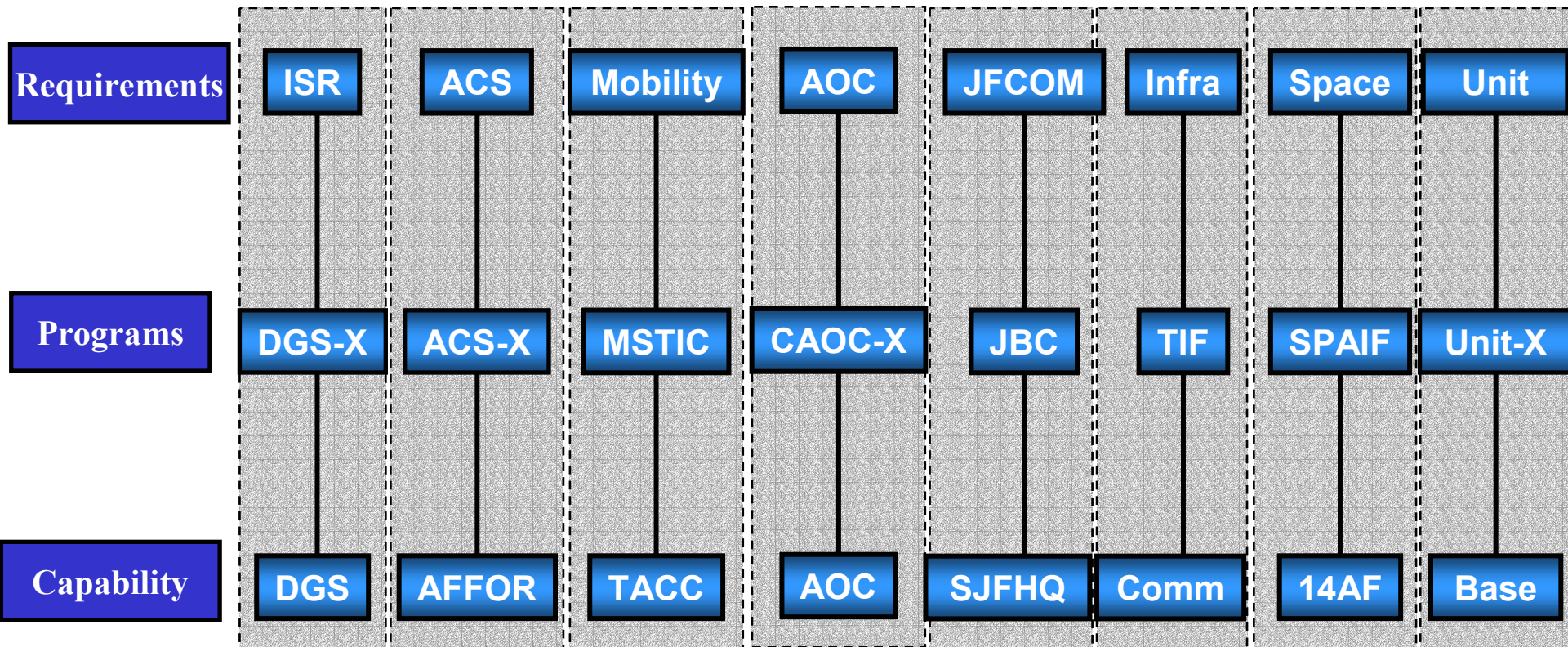
"Create an acquisition policy environment that fosters efficiency, flexibility, creativity, and innovation"
Deputy Defense Secretary Paul Wolfowitz on interim acquisition guidance

Before: Stovepipe Development

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Requirements	ISR	ACS	Mobility	AOC	JFCOM	Infra	Space	Unit
Programs	DGS-X	ACS-X	MSTIC	CAOC-X	JBC	TIF	SPAIF	Unit-X
Capability	DGS	AFFOR	TACC	AOC	SJFHQ	Comm	14AF	Base

AF C2 Transformation Center Mission Statement

Operators leading teams of users, developers, acquirers and testers to transform concepts, organizations and technologies into a common infrastructure, support tools and decision making capabilities to command and control the full spectrum of air and space power at all echelons – service, joint, and coalition
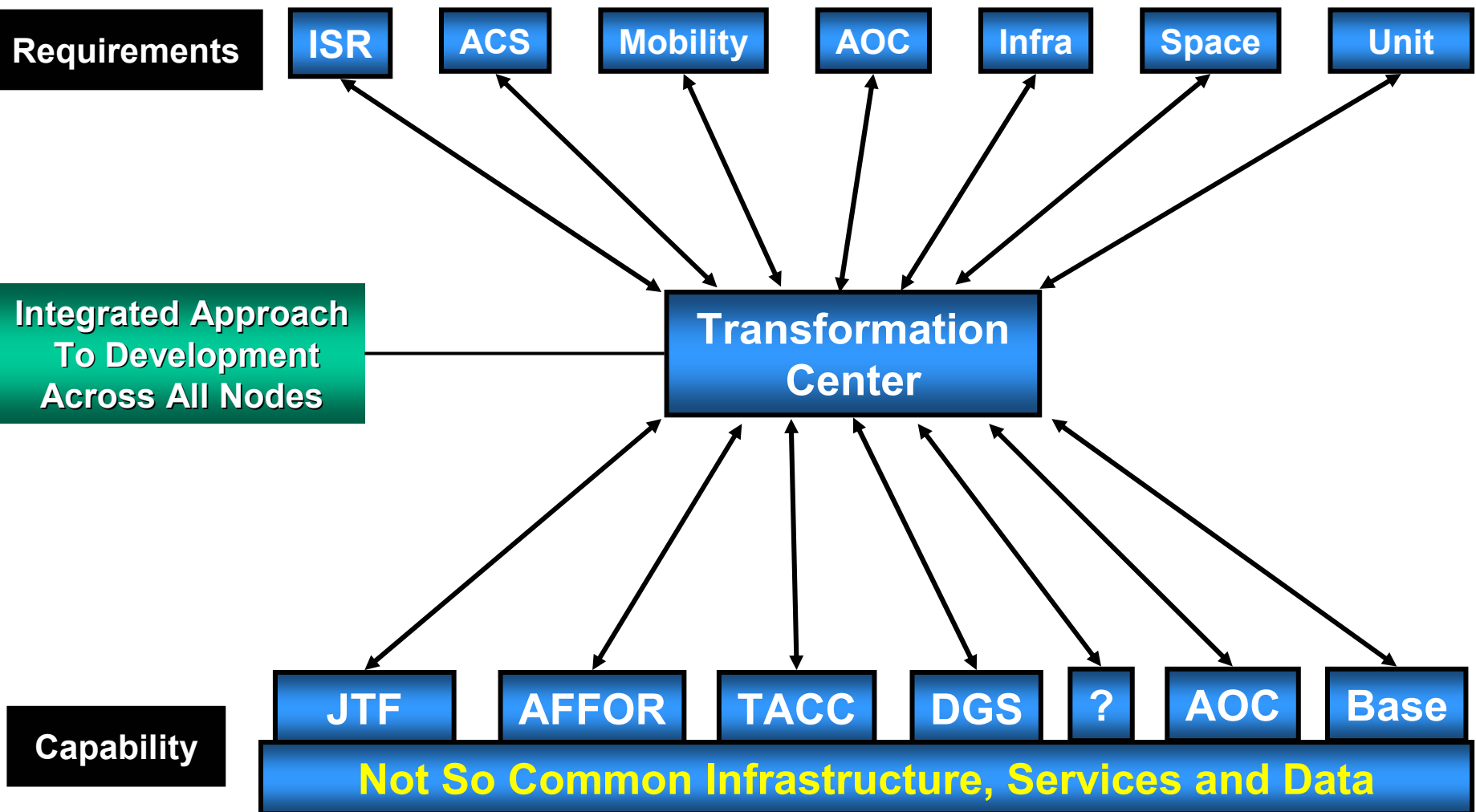
Place, process, and environment to integrate capability

C2 Transformation - Now

U.S. AIR FORCE

Requirements

| ISR | ACS | Mobility | AOC | Infra | Space | Unit |

Integrated Approach To Development Across All Nodes

Transformation Center

Capability

| JTF | AFFOR | TACC | DGS | ? | AOC | Base |

Not So Common Infrastructure, Services and Data

C2 Transformation - Next

U.S. AIR FORCE

Integrated Requirements

ISR	ACS	Mobility	AOC	Infra	Space	Unit

Fully Integrated Operator Requirements

Integrated Approach To Development Across All Nodes

Transformation Center

Capability

JTF	AFFOR	TACC	DGS	?	AOC	Base

Prototype Integration Efforts

Not So Common Infrastructure, Services and Data

C2 Transformation - Future

U.S. AIR FORCE

Integrated Requirements

ISR	ACS	Mobility	AOC	Infra	Space	Unit

Fully Integrated Operator Requirements

Integrated Approach To Development Across All Nodes

Transformation Center

Integrated Capability

Horizontally and vertically integrated applications

Common Services

Common Infrastructure and Data

Initial Transformation Path

- **Today's AOCs & DGS**
  - **Focus is on the nodes**
  - **Processes are complementary but separate**

- **CAOC-Next, DGS-Next (and Deployable Joint C2)**
  - **Focus on the information & process**
  - **Process is continuous & predictive for dynamic execution**

- **Advanced Technology AOC**
  - **Integrated, interoperable information & infostructure**

AOC   DGS

CAOC-Next   DJC2   DGS-Next

AT AOC

AT AOC Is An Information Fusion Center

Transformation Objectives

- **Identify and fill gaps in capabilities**
- **Identify and eliminate duplicate capabilities**
- **Converge to standardized common infrastructure**
- **Take advantage of advances in technology and concepts of operation**
- **Build and maintain our asymmetrical advantages over our adversaries**
- **Significantly improve our warfighting capabilities to meet the demands of emerging security threats**
- **Fully integrate BMC4I into C2 Constellation**

Today's Technology Today

Transformation Center Desired End State

- **Eliminate stove pipes and lengthy fielding efforts**
  - **One team**
  - **One process**
  - **One set of priorities**
  - **One schedule**
  - **One Air Force voice**
- **Integrated Capability**

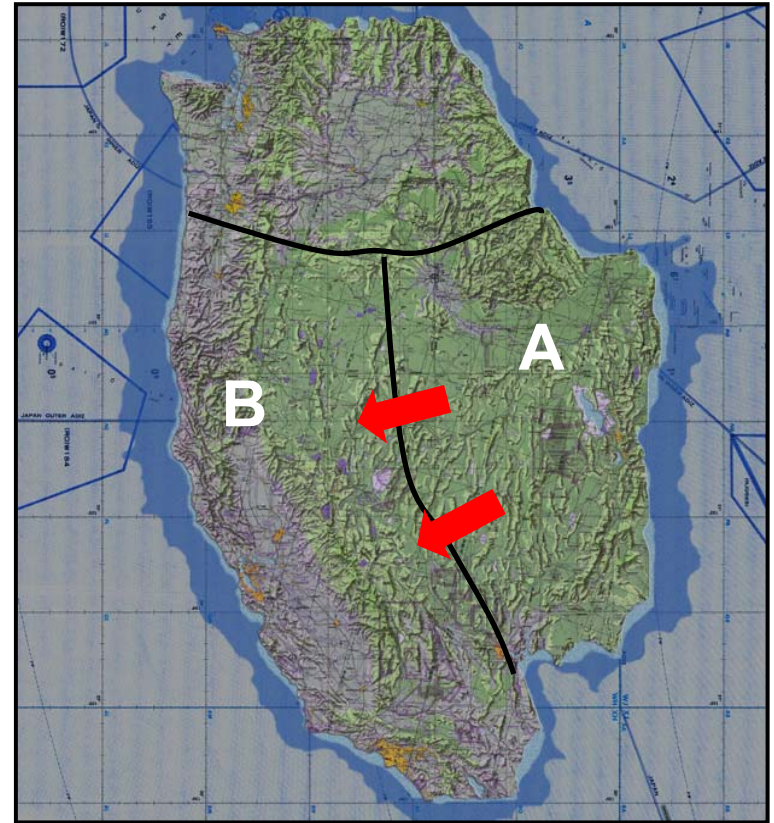**Unique Environment Enables Rapid Prototyping/Development/Fielding**

Questions?

Knowledge Wall Demo

- **Demo is a Vision not an application**

- **Uses a Time Sensitive Targeting scenario based on Pacifica**

- **Country A has seized mineral deposits in country B**

- **B has asked for assistance**

- **US has responded**

- **Demo shows how "Science of control enables the art of command"**

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AFTC role in FIOP

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Family of Interoperable Operational Pictures

- **JROC directed Multi-Service Project**

- **AF is Lead with AFC2ISRC/CC as Executive Agent**

- **Goal is to** *"Provide an all-source picture of the battlespace containing actionable, decision-quality information to the warfighter through a fusion of existing databases..."*

- **Priority Task 1.1 for FY 02-03 (AF responsibility)**

  - **Web-Enabled Execution management**

    - **Battlespace Awareness**
    - **Horizontal/Vertical Integration**
    - **Continuous assessment**

  From AOC CONOPS

Overarching Requirements

- **Battlespace Awareness** – provides an accurate picture of friendly and enemy operations within the area of interest – view and monitor potential targets giving the commander the ability to redirect assets

- **Horizontal/Vertical integration** –effective Horizontal/Vertical integration between Components and Higher Headquarters during execution improves ability to Find, Fix, Target, Track, Engage, Assess (F2T2EA) at the right time and place *…"*

- **Continuous Assessment** – during execution each functional area continuously monitors changes to the plan. This information provides a comprehensive picture of current and projected capability, and is tailored to the needs of the the decision maker

Automated Deep Operations Cordination System (ADOCS)

- **Army ACTD in use in Korean theatre**
- **Being adapted as FIOP spiral 1 increment 1**
- **Rapidly fielded to 1AF post 9/11**
- **Operational assessment at UFL Aug 02**
- **Installation at PSAB TBD**
- **Adding additional interfaces and products as a result of MC02**
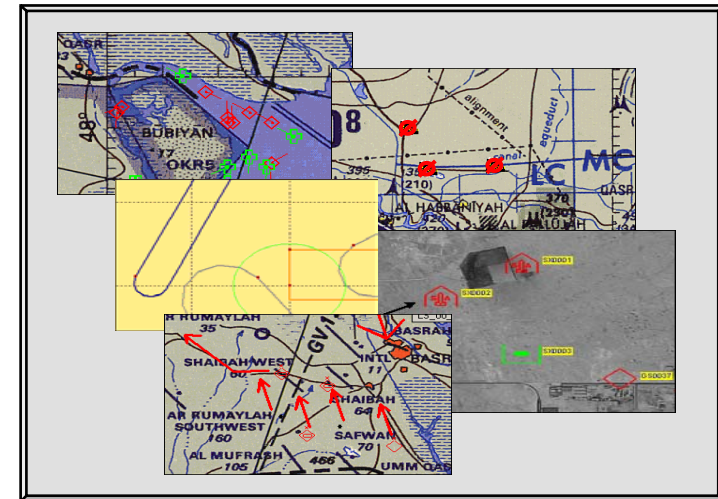
Time Sensitive Targets						NLT	TDO	AIR	DCO	CM	CA	PSD
Target No.	Description		Mission No.	Aircraft	Call Sign							
AB0010	TROOPS IN OPEN						🟩	🟨	🟨			
AB0011	ACFT ON RUNWAY		4510B	2/F4E	LIONS11		🟩	🟩	🟩			
AB0012	SCUD TEL					47:00	OLD					
AB0013	SOF IN OPEN		4552A	2/F5E	COLTS47		🟩	🟩	🟩	🟩	🟩	

Joint Execution Tool (JET)

- **FIOP spiral 1 increment 2**
  - **Mimic ADOCS functionality**
  - **COE compliance**
  - **Web-enabled capability**
- **Started development in Jul 02**
- **Working demo completed Sep 02**
- **Contract award early FY03**
- **Capability to be tested and delivered end FY04**

ADOCS functionality defined
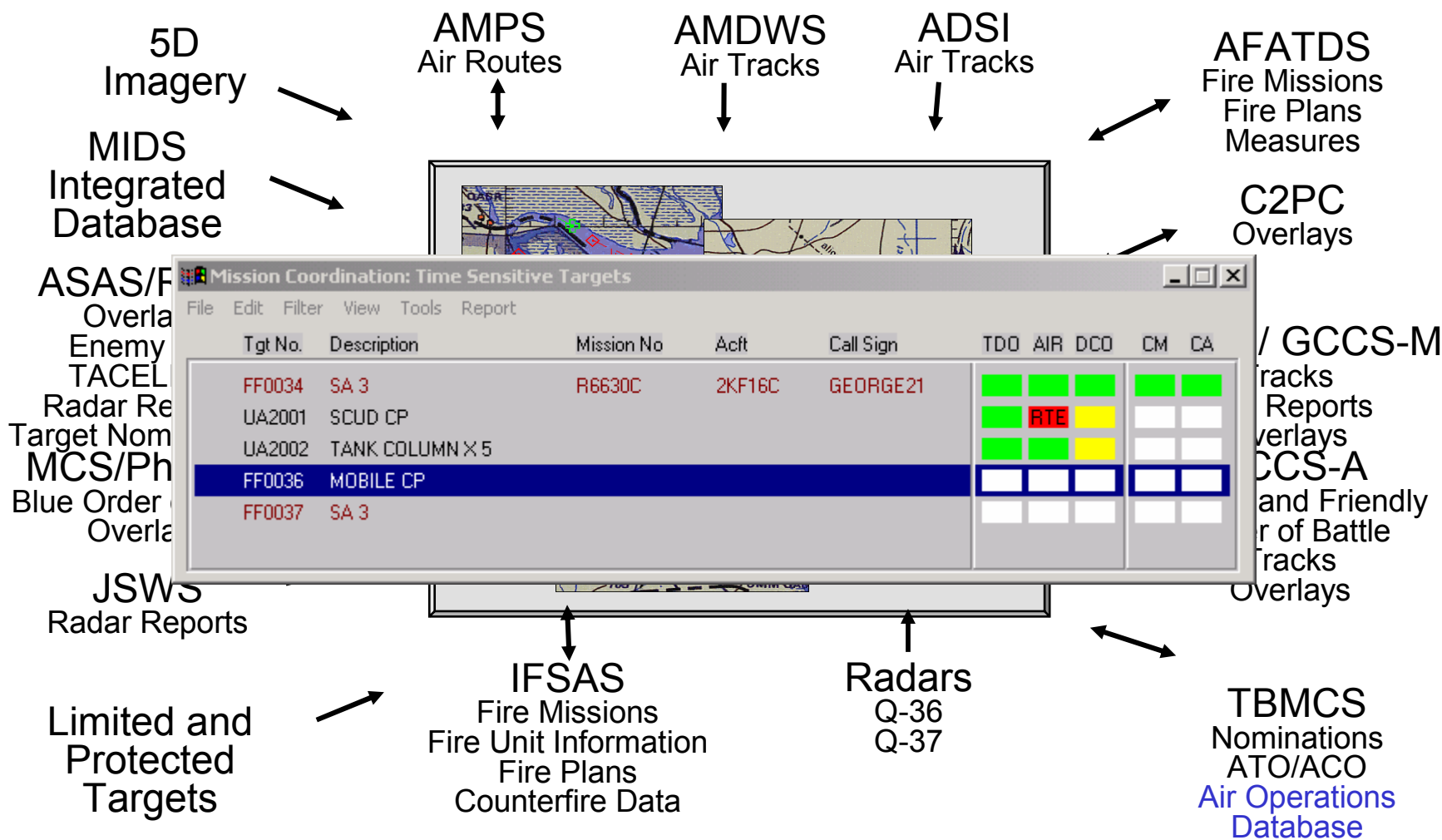
- **Windows-based look and feel - simple user interface**
- **Rapid map movement and interaction**
- **Ability to coordinate horizontally and vertically**
- **User selectable visualization of multiple data sources**
- **Continuously updated information on screen**
- **Drill down to get amplifying (detail) information**
- **User definable filters on all data**
- **Pass data across nodes**

Feeds and Mission Manager

5D
Imagery

MIDS
Integrated
Database

AMPS
Air Routes

AMDWS
Air Tracks

ADSI
Air Tracks

AFATDS
Fire Missions
Fire Plans
Measures

C2PC
Overlays

ASAS/F...
Overla...
Enemy...
TACEL...
Radar Re...
Target Nom...

MCS/Ph...
Blue Order ...
Overla...

/ GCCS-M
...racks
... Reports
...verlays

...CCS-A
...and Friendly
...r of Battle
...Tracks
...Overlays

JSWS
Radar Reports

Limited and
Protected
Targets

IFSAS
Fire Missions
Fire Unit Information
Fire Plans
Counterfire Data

Radars
Q-36
Q-37

TBMCS
Nominations
ATO/ACO
Air Operations
Database

Mission Coordination: Time Sensitive Targets

File Edit Filter View Tools Report

Tgt No.	Description	Mission No	Acft	Call Sign	TDO	AIR	DCO		CM	CA
FF0034	SA 3	R6630C	2KF16C	GEORGE21	🟩	🟩	🟩		🟩	🟩
UA2001	SCUD CP				🟩	RTE	🟨			
UA2002	TANK COLUMN X 5				🟩	🟩	🟨			
FF0036	MOBILE CP									
FF0037	SA 3									

ADOCS Demonstration

What We Will See:

Threat Visualization, Collections, BDA, Execution Management Coordination and Mission Results